IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF OHIO
WESTERN DIVISION – CINCINNATI

UNITED STATES OF AMERICA,	:	Case No. 1:20-cr-121
	:	
Plaintiff,	:	
	:	Judge Matthew W. McFarland
v.	:	
	:	
FURIOUS SUAVE CARNEY,	:	
	:	
Defendant.	:	
	:	

ORDER DENYING DEFENDANT'S
MOTION TO EXCLUDE DNA EVIDENCE (Doc. 33)

This matter is before the Court on Defendant Furious Suave Carney's Motion to Exclude DNA Evidence and Request for a *Daubert* Hearing (Doc. 33). The Government filed a Response, to which Defendant replied. (*See* Docs. 37 and 39, respectively.) The Court held a *Daubert* hearing on December 15 and 16, 2021, and the parties thereafter filed supplemental briefing. (*See* Docs. 47, 28, 53.) This matter is now ripe for adjudication. For the following reasons, the Court **DENIES** Defendant's Motion.

FACTUAL BACKGROUND

Defendant is charged with distribution of a controlled substance that resulted in two deaths. The deceased individuals were found in an apartment from where the officers collected a blue piece of paper containing an unknown white powder ("Item 5-1"). The Hamilton County Crime Lab ("HCCL") analyzed this piece of paper and

compared a sample taken therefrom to the DNA profiles of two known samples: one of the deceased and Defendant.

Mark Squibb, a forensic scientist with the HCCL, performed the DNA analysis and provided a written report, on which the Government intends to rely at trial. The report states in pertinent part:

> A DNA profile was identified from the piece of paper, Item 5-1, that is a mixture of DNA from at least three individuals. For this mixture, major and minor DNA profiles were identified. The major DNA profile matches the profile obtained from Furious Carney, CL 15-02262-1. D.M., Item 1-3, is excluded as the contributor of the major DNA profiled obtained from Item 5-1. In the absence of an identical twin, Furious Carney is the source of the major DNA profile obtained from Item 5-1. The probability in which the major DNA profile obtained from the evidence would be expected to occur in a random individual in the population is 1 in 299 septillion 400 sextillion. Alleles were present in the minor DNA profile that fell below reporting standards. Therefore, the minor DNA profile cannot be used for comparison purposes.

(Motion to Exclude, Doc. 33, Pg. ID 118-19.)

DEFENDANT'S MOTION

Defendant argues that Mr. Squibb's report and its conclusion that Defendant's DNA was a match to the sample should be excluded as the result of an unreliable methodology. Defendant claims this unreliability stems from the fact that the HCCL's validation studies do not support the interpretation of complex mixtures because they were limited to two-person mixtures, rather than three or more (the definition of a "complex mixture"). (*See id.* at Pg. ID 121.) According to Defendant's expert, "for interpretation guidelines to be reliable, they must be informed by validation studies of concomitant complexity." (*Id.*)

Stated another way, Defendant takes issue with the HCCL's methodology of using manual interpretation and binary statistic weighting to report conclusions in complex samples when the interpretations resulting in these conclusions were informed by validation studies limited to two-person mixtures. (*See id.* at Pg. ID 122.) So, "[i]n a nutshell, the defense submits that the procedures used by the HCCL are not valid to interpret samples like the one at issue here and, as such, the interpretations they are performing are both unreliable and unsupportable." (Supp. Brief, Doc. 47, Pg. ID 686.) Defendant thus contends that the opinion in this case fails under Rule 702(b), (c), and (d).

Given its import into the analysis, the Court will break down and further define the methodology being challenged: manual binary interpretation. As set forth during the *Daubert* hearing, "manual interpretation means a person is doing it. There is [sic] no computer algorithms involved . . . And then 'binary' simply means that you have a choice of really three conclusions, included, excluded, or inconclusive, as opposed to a range of probabilities that would be produced by more sophisticated software." (Doc. 44, Transcript Day 1, Pg. ID 574.) Stated more simply: the HCCL analysts conduct a visual inspection to analyze and interpret DNA mixture samples. (*Id.* at Pg. ID 476-77.)

In support of his challenge to the methodology, Defendant also points out that Mr. Squibb did not take any laboratory notes during his analysis so that another analyst could understand his reasoning. (Motion, Doc. 33, Pg. ID 123.) Defendant contends that contemporaneous notes are necessary given that Mr. Squibb's results are based on his subjective visual analysis. (*Id.*) Defendant further disapproves of the HCCL Interpretation Guidelines, which permit the "separation of a major contributor 'if there is

a distinct contrast in peak intensities between the alleles and the alleles contributing to the largest peak heigh values satisfy the conditions of a single source specimen.'" (*Id.*) (quoting Declaration of Dr. Norah Rudin, Doc. 33, ¶ 17(c)(i), Pg. ID 153.) Defendant notes that using "distinct contrast" as a standard is a "non-qualitative personal judgment that lacks both specificity and validation support." (*Id.*)

Finally, Defendant argues that Mr. Squibb's conclusion pertaining to the DNA match should not be admitted because it "usurp[s] the role of the trier of fact."[1] (*Id.* at Pg. ID 124.)

LAW

Defendant challenges the reliability of the HCCL's methodology. Federal Rule of Evidence 702 governs the admissibility of scientific or other technical evidence. Rule 702 permits such evidence to be admitted if: "(a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case." Fed. R. Evid. 702.

The question of reliability is guided by four factors: (1) whether the technique is testable; (2) whether the technique has been subjected to peer review; (3) the extent of the error rate and whether it can be lowered; and (4) whether the technique is generally

[1] The parties do not argue this point extensively, focusing instead on the factors discussed below. However, to be clear, the Court finds this argument unavailing, as the trier of fact ultimately decides what weight to assign this DNA evidence. The DNA evidence alone does not prove all elements of the offense beyond a reasonable doubt. As such, it does not usurp the duty of the trier of fact.

accepted in the scientific community. *See United States v. Gissantaner*, 990 F.3d 457, 463 (6th Cir. 2021) (citing *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579, 593-94 (1993)). The guiding principle, in considering these factors and thus determining the admissibility of the challenged evidence is whether the evidence is the "product of reliable principles and methods" which were "reliably applied" in the case. *See id.*

The Court acknowledges that it has a "gatekeeping role" in screening expert testimony for its presentation to the jury. *Daubert*, 509 U.S. at 597. However, "it has 'considerable leeway' in determining reliability." *Babcock Power, Inc. v. Kapsalis*, Nos. 19-5494/5542, 2021 WL 1149690, at *5 (6th Cir. Mar. 25, 2021) (citing *Conwood Co., L.P. v. U.S. Tobacco Co.*, 290 F.3d 768, 792 (6th Cir. 2002)).

ANALYSIS

With this black letter law and Defendant's arguments set forth above, the Court now turns to each of the factors to determine whether the DNA evidence in this case is sufficiently reliable to be introduced to the jury.

A. Testability

It is important that a methodology be testable—otherwise, it remains only theory and completely devoid of science. *See Gissantaner*, 990 F.3d at 463. Said another way, without testability, there can be no way to show that the challenged methodology "works." *See id.* Importantly, the center of this inquiry is whether the methodology "can be 'assessed for reliability,' not whether it always gets it right." *Id.* (quoting Fed. R. Evid. 702 advisory committee's note to 2000 amendment). When the dispute focuses on the "'adequacy of the [theory's] testing' or about the 'accuracy of [a theory's] results,'

generally speaking, [the arguments] provide grist for adversarial examination, not grounds for exclusion." *Id.* (quoting *United States v. Bonds*, 12 F.3d 540, 558-59 (6th Cir. 1993)).

Defendant argues that the manual binary interpretation methodology is not testable, primarily because of the subjective nature of the interpretation. Defendant points to the HCCL Interpretation Guidelines, which instruct the analyst to award "major contributor status" based on "distinct contrast" between the alleles. (Supp. Brief, Doc. 47, Pg. ID 688-89.) Defendant also contends that the lack of contemporaneous notes supporting the interpretation as further indication of lack of testability and thus unreliability. (*See id.* at Pg. ID 689.)

The Court finds these arguments unpersuasive because the HCCL's methodology can be tested. Most of Defendant's arguments appear geared towards the "manual" portion of the interpretation process and the fact that it is largely subjective. However, the methodology, even assuming it is largely subjective, is capable of being tested. Indeed, it was tested by virtue of the second analyst performing an independent interpretation of the profile after Mr. Squibb completed his initial analysis. (Doc. 44, Transcript Day 1, at Pg. ID 479, 498.) Nothing requires that the testing occur by a third party or other independent evaluation.

Further, HCCL has validation studies that show that the methodology at issue *can be tested*. Defendant's arguments go to the adequacy of the testability—that is, whether the two-person mixture properly validates the interpretation. The attack on adequacy

generally supports that this question is better answered by the jury. *See Gissantaner*, 990 F.3d at 463.

Moreover, there were Known and Non-Probative verification studies performed that include more than two contributors and which were used to validate the results of the Globalfiler machine at least to some extent. (*See* Doc. 37 at Pg. ID 201-02; Doc. 39, Pg. ID 232-33.) While the parties dispute the import and purpose of these studies, (*see id.*), Defendant's arguments regarding the characteristics of the validation studies, including whether it is sufficient to inform the interpretation of a complex mixture goes to weight, not admissibility.[2] *See Gissantaner*, 990 F.3d at 463.

Finally, the fact that Mr. Squibb did not contemporaneously record notes does not render his analysis inadequate or unreliable. Mr. Squibb was examined at the hearing about his actions, his conclusions, and the reasons for each. (*See, e.g.*, Doc. 44, Transcript Day 1, at Pg. ID 532-34.) He recorded the information he deemed necessary and which is required under HCCL protocol. Therefore, the lack of notes does not erode reliability.

The bottom line is that the methodology can be tested. Therefore, the Court finds the methodology at issue to be testable.

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[2] Defendant argues that the Court should follow the court in *United States v. Williams*, 382 F. Supp. 3d 928 (N.D. Cal. Apr. 29, 2019) and exclude the DNA evidence in this case as that court did. However, the *Williams* decision is distinguishable. There, it is true that there was a dispute regarding the number of contributors to the DNA profile and whether the machine was validated for interpretation of profiles with more than a certain number of contributors. *Id.* at 936. However, there, unlike here, the analyst inputted specific information regarding the number of contributors, and that court found paramount that ". . . the number of contributors is a foundational part of every calculation [the software] performs." *Id.* at 938. For that reason, and given the uncertainty regarding the number of contributors, that court concluded that the DNA evidence did not meet the threshold reliability requirement. *See id.* That is not the case here, as there is no dispute that the mixture in this case is "complex" and that, not the exact number of contributors, serves as the basis for Defendant's argument regarding proper validation and testing. Thus, these questions are better suited to the jury weight of the evidence.

B. Peer Review

Another measure of reliability is whether the methodology has been subject to "peer review and publication." *Gissantaner*, 990 F.3d at 464. While publication in a peer-reviewed journal generally satisfies this condition, there is no requirement for independent authorship. *See id.* at 464-65. Indeed, "[i]f experts 'have other scientists review their work' and if the other scientists have the chance to identify any methodological flaws, that usually suffices." *Id.* at 465 (quoting *Mitchell v. Gencorp Inc.*, 165 F.3d 778, 784 (10th Cir. 1999)).

Defendant argues that use of the manual binary method to interpret complex mixtures samples has not been subjected to peer review. One of the potential reasons for this, according to Defendant, is essentially the fact that the method is "outdated." Defendant again argues that HCCL's failure to update its validation studies to reflect the mixture ratios and interpretation protocol to align with the types expected within its case work renders the methodology unreliable.

However, HCCL's alleged failure to update its protocols have no bearing on whether the methodology is peer reviewed. Indeed, the thrust of this factor is whether there are other scientists who can review the method and identify potential flaws. *See id.* That occurred here. Here, again, we know that another analyst conducted a review after Mr. Squibb performed his initial analysis. Of some important, the reviewing analyst reached the same conclusion that Mr. Squibb did, suggesting no overt issues with how Mr. Squibb conducted his analysis. Nonetheless, another analyst had the opportunity to, and did, review the analysis of the sample at issue in this case.

Further, as Defendant points out in his post-hearing brief, 20% of laboratories in the United States continue to use manual interpretation to interpret DNA profiles. (*See* Defendant's Supp. Brief, Doc. 47, Pg. ID 691, n. 10.) Moreover, as Defendant appears to acknowledge, all forensic laboratories at some point utilized the manual validation, suggesting the opportunity for review and comment in the field. This is not a new and cutting-edge technique, and so Defendant is able to point out potential concerns with the process and the associated conclusion—again suggesting that this is an issue of weight to be decided by the jury.

Finally, as will be discussed below, the Court notes that the HCCL has been and remains accredited within its field. While the Court appreciates that being accredited does not guarantee the reliability of the methodologies used generally by the HCCL or as used in this case, it is relevant to the Court's analysis insofar as it shows that the accrediting agency has had the opportunity to review the HCCL's methodologies and actions generally and has not raised any issues for correction prior to accrediting the HCCL.

Accordingly, the Court finds that the methodology has been sufficiently subjected to peer review.

C. Error Rate

This factor focuses on the rate of error involved in using the methodology and "whether the scientific community has established standards that forensic scientists can use to mitigate the risk of error." *Gissantaner*, 990 F.3d at 465. So, for example, whether

the identified methodology has a high error rate, and there are no standards or guidelines to minimize these risks would be of concern. *Id.*

Neither party argues specifically to the Court what the error rate is or what it means. Defendant argues only that no error rate information was provided, likely because, according to Defendant, it cannot be known, while the Government argues that the error rate information is in the record. However, the Government goes further to point out that "[t]he technology has standards to mitigate risk." (Gov. Supp. Brief, Doc. 48, Pg. ID 718.)

The Court agrees. The parties have argued extensively about the various groups and agencies that produce guidelines and standards regarding this technology, best practices, ways to minimize risk, etc. Thus, the technology has implemented guidelines and standards to mitigate risk. And while there is a risk of error associated with this methodology, the parties can present such information to the jury, who can then decide whether to credit the evidence. Nonetheless, the information provided to the Court does not suggest an error rate so concerning so as to require exclusion of the evidence.

D. General Acceptance in the Scientific Community

Finally, the Court must examine whether the method at issue is generally, even if not uniformly, accepted within the scientific community. *Gissantaner*, 990 F.3d at 466. Even when there is doubt amongst those in the scientific community as to the propriety of the method, so long as there is general acceptance, the methodology passes muster under this factor. "After that, the long-tested cauldron of cross-examination, not exclusion, is the place to go for accuracy." *Id.*

As noted above, the majority of the argument and evidence offered during the evidentiary hearing focused on this factor: whether the HCCL's methodology comports with the methods accepted by the scientific community. Defendant points to the revisions made in July 2020 to the Quality Assurance Standards ("QAS") provided by the FBI in support of his argument. (Def. Supp. Brief, Doc. 47, Pg. ID 694.) The parties appear to agree that the QAS are the standards with which a forensic lab needs to comply, at least if it seeks access to CODIS. (*Id.* at Pg. ID 698; Doc. 48 at Pg. ID 748.) Defendant points to the revisions made to Forensic Standard 8.3.1, which indicates that "[m]ixed DNA samples that are representative of those typically encountered by the testing laboratory shall be evaluated. Forensic mixture studies should use known samples that represent the number of contributors and the range of general mixture types for which the procedure will be used in casework . . . and must be used to develop interpretation guidelines." (Def. Supp. Brief, Doc. 47, Pg. ID 694)(quoting Govt. Ex. 8 at p. 37.) Defendant argues that because HCCL does not use a complex mixture to validate its interpretation of complex samples, HCCL does not comply with the revised QAS standard, rendering its methodology unreliable.

The Government contends that the HCCL satisfies the revised QAS because it need only update its mixture studies when new equipment is installed. The validation mixture studies were performed at the Globalfiler's install, which was in 2014, thus rendering the 2011 QAS applicable. (*See* Doc. 44, Transcript Day 1, Pg. ID 559.) Defendant appears to concede that the Government is correct. (*See* Def. Supp. Brief, Doc. 47, Pg. ID 699.) Defendant cites to the QAS, which states "[a]dditional validation requirements specified

in Standard 8 and effective July 1, 2020 are applicable to validations completed on or after July 1, 2020. Validations summarized after September 1, 2011 and prior to July 1, 2020 will need to be evaluated against the 2011 QAS." (*See id.*)(citing The Guidance Document for The FBI Quality Assurance Standards for Forensic DNA Testing and DNA Databasing Laboratories Effective 07/01/2020 at page 32, Forensic Standard 8.1, available at https://www.fbi.gov/filerepository/qas-guidance-document-070120.pdf/view.) Thus, per the plain language of the QAS, HCCL is compliant with the current version of the QAS.

Defendant contends that HCCL's work is still falling below the "standard of what is generally accepted in the forensic scientific community," even though it is accredited through the QAS audit process, because it is not following the substance of the standards. But the Court disagrees. The evidence shows that HCCL is QAS compliant and accredited by ANAB. These are authorities within the field. While HCCL does not appear to comply with some of the other guidelines identified by Defendant, including SWGDAM and the guidelines authored by John Butler, it appears that HCCL complies with those basic requirements in the field—QAS.

Further, the Court cannot ignore, as Defendant points out, that at least 20% of all forensic labs in the United States use at least some extent of manual interpretation methods in their DNA analysis, and at one time, most of the labs utilized a manual interpretation of DNA. (*See* Defendant's Supp. Brief, Doc. 47, Pg. ID 691, n. 10.) This is not a small percentage and does not clearly suggest that HCCL is an outlier. While labs may have moved away from manual interpretation, the Court cannot conclude, in light

of the above, that the manual, binary interpretation methodology is not generally accepted within the community. Sure, it might not be overwhelmingly accepted anymore—but that is not the standard. Given the number of labs still utilizing some form of manual interpretation, and the fact that this methodology has been used for years, the Court cannot conclude that the method is not generally accepted in the community.

CONCLUSION

The thrust of Defendant's argument is not that the technology at issue is so up and coming that its reliability is questionable. Rather, his argument is that the technology that has been in use for decades is no longer as good as the newer, more cutting-edge technology. The Court recognizes certain risks associated with the manual, binary methodology, and it further appreciates that Defendant and his expert want the "gold standard"—but the "gold standard" is not the standard for admissibility. Rather, the methodology must be reliable, not perfect. The question of accuracy is left for the trier of fact. Because the Court finds the methodology at issue to be reliable, and Defendant's challenges to be better suited for argument to the jury as to the weight it should assign the evidence, the Court **DENIES** Defendant's Motion (Doc. 33).

IT IS SO ORDERED.

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF OHIO

By: _____
MATTHEW W. McFARLAND
UNITED STATES DISTRICT JUDGE